

**ABSTRACT**

The present invention is drawn to a method of performing a one-pot organic reactions including carbon monoxide as reactant, without the use of an external CO gas source, wherein a reaction mixture containing a solid or liquid CO releasing compound, a non-metal substrate and a metal catalyst is exposed to an energy source to release carbon monoxide from the CO releasing compound and wherein carbon atoms of the released carbon monoxide form a bond with the non-metal substrate compound. The present invention is further drawn to a method of preparing chemical libraries and a kit for organic reactions.